DOCUMENT RESUME

ED 321 669 HE 023 687

AUTHOR Beil, Cheryl; Shope, Janet H.
TITLE No Exit: Predicting Student Persistence. AIR 1990 Annual Forum Paper.
PUB DATE May 90
NOTE 18p.; Paper presented at the Annual Forum of the Association for Institutional Research (30th, Louisville, KY, May 13-16, 1990).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Persistence; College Environment; *College Students; *Dropout Research; Higher Education; Predictive Measurement; Predictor Variables; Private Colleges; Student Attitudes; *Student Attrition; Student Welfare; Withdrawal (Education)
IDENTIFIERS *AIR Forum

ABSTRACT

A longitudinal study was conducted to determine the factors influencing college student persistence in remaining in school. Persistence was examined at two points: after the first year and 4 years after enrollment. The study was conducted at an urban university using the American College Testing's Entering Student Survey and Student Opinion Survey. Key variables such as region, satisfaction with campus social life, freshman quality point index, attendance at a summer orientation and registration program, and satisfaction with academic advising were identified as cogent predictors of persistence after the first year. Six variables affected the odds of persisting 4 years after enrollment: gender, financial aid, academic advising, institutional attitude toward students, satisfaction with institution, and membership in a sorority or fraternity. Contains 12 references. (GLR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

#1

ED321669

No Exit: Predicting Student Persistence

Cheryl Beil, Ph.D.

The George Washington University

Janet H. Shope, Ph.D.

Goucher College

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Presentation at the Association for Institutional Research

30th Annual Forum, Louisville, Kentucky

May 13-16, 1990

Running Head: Predicting Student Persistence

HE023697

BEST COPY AVAILABLE

for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirtieth Annual Forum of the Association for Institutional Research held at The Galt House, Louisville, Kentucky, May 13-16, 1990. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Chair and Editor
Forum Publications Editorial
Advisory Committee

Abstract

This paper examines the results of a four year longitudinal study of persistence at an urban university using American College Testing's Entering Student Survey and Student Opinion Survey. Persistence was examined at two points in time: after the first year and four years after enrollment. Key variables such as region, satisfaction with campus social life, freshman quality point index, attendance at a summer orientation and registration program, and satisfaction with academic advising were identified as cogent predictors of persistence after the first year. Six variables affected the odds of persisting four years after enrollment: gender, financial aid, academic advising, institutional attitude toward students, satisfaction with institution, and membership in a sorority or fraternity. The findings support Tinto's emphasis on the importance of students' academic and social integration into the university.

Introduction

The national decline in high school graduates has led many colleges and universities to assess their students' attrition and to develop programs to increase retention rates. Colleges can no longer be assured of large applicant pools to fill spaces left vacant by students who drop or stop out before completing their degrees. Before programs can be developed to help retain students, it is important to understand the characteristics of persisters and nonpersisters.

According to Tinto (1987), 44 out of every 100 new college students will have left their initial institution after two years. While high school grade point average and SAT verbal scores are good predictors of success in college, they do not provide complete information about a student's persistence at one institution. Similarly, demographic data, while informative, does not provide insight into the impact of various aspects of the university on student attrition. Data collected during students' freshman year indicate why students choose to attend a particular college, what their aspirations are, and what their first impressions are about the university. However, data collected during the second year provides insight into how students' satisfaction with various aspects of the university community can affect persistence.

Longitudinal studies of college retention usually examine the characteristics of persisters and nonpersisters at two points in time to determine who graduates: at their initial entrance into college as freshman and four plus years later. A number of personal characteristics appear to be significant in predicting retention: race (Avakian et al., 1984), gender (Avakian et al., 1984; Langer et al., 1987), college grade point average (Avakian et al., 1984; Langer et al., 1987), full-time status (Langer et al., 1987),

academic ability (Astin et al., 1975), academic and family background (Astin et al., 1975), study habits (Astin et al., 1975), future aspirations (Astin et al., 1975), and marital status (Astin et al., 1975). Astin (1975) found that the fit between the student and a particular college was also an important factor in student persistence.

Tinto (1987), in exploring the causes of attrition, theorized that the decision to stay or drop out of college is influenced initially by the student's preenrollment characteristics and, once on campus, by the student's integration into the social and academic communities at the college or university. In his longitudinal study of 41,000 undergraduates which surveyed students at their point of entry and four years later, Astin (1975) found that the characteristics of persisters changed at two points. The important entering characteristics for persisters were students high school grades, degree aspirations, religious background, good study habits, high expectations about academic performance in college, highly educated parents, and marital status (being married for males and being single for females). Four years later, the important characteristics were good grades, being single for females, being childless for males, living in a college resident hall, having a part-time (as opposed to a full-time) job, involvement in extracurricular activities, and parental support.

Although research indicates that the personal characteristics of persisters change over four years, little is known about when these changes occur. A review of the literature indicates a paucity of sophomore and junior year surveys.

This research is based on the assumption that as students matriculate, different factors affect their persistence. Among entering freshmen, it is hypothesized that persistence results from a combination of the students' personal characteristics and their

initial institutional experience. During their sophomore year, it is hypothesized that having positive academic and social experiences positively affects persistence.

Method

In the fall of 1984, American College Testing's (ACT) Entering Student Survey (ESS) was administered through English composition classes to entering freshmen at a private, urban university. The ESS included demographic and educational information about the entering student class. Ninety-one percent (n=1113) of the students responded. The following year ACT's Student Opinion Survey (SOS) was administered through the mail and residence halls to all sophomores. The SOS explores how enrolled students perceive the services and programs provided by the university. Seventy-six percent (n=682) of the sophomore class responded. In addition, 51% of the sophomores had completed the ESS. The first part of the analysis includes only those entering students who completed the ESS (n=868); part two includes only those second year students who completed both the ESS and the SOS (n=367).

Part 1

The effects of eleven variables on persistence were examined. Three variables provided background information about the student: gender, race, and region. Gender is a dichotomous variable where 1=male, 0=female. Race is measured by a dummy variables where 1=white, 0=nonwhite[1]. Region is measured by a dummy variable where 1=Mid-Atlantic, 0=other[2]. Two variables measured academic ability: high school grade point average (GPA) and freshman quality point index (QPI). High school GPA as

---

[1] Over three-fourths of the students (79%) were white.

[2] Over half the students (62%) were from the Mid-Atlantic region.

measured on the ESS is an ordinal variable[3] ranging from 1 to 7: a value of one represents a self-reported GPA ranging from 3.5 to 4.0 and a value of 7 indicate a GPA of 0.00-0.99. Freshman QPI is measured by a continuous variable at the end of the student's first year.

Students' institutional commitment was measured by their plans to graduate from the institution. A dummy variable was constructed where 1=yes, plans to graduate, and 0=no or uncertain. A dummy variable, SARP, measured whether students attended a summer orientation and registration program (1=yes, 0=no). Two measures of academic integration (students' ratings of academic advising and the quality of instruction) and one measure of social integration (rating of campus social life) were included. Responses were scored on a five-point Likert scale where 1=excellent and 5=failure[4]. Also included was a variable that indicated whether or not the student received financial aid (1=yes, 0=no).

Part 2

The second part was a longitudinal analysis of the responses of students completing the ESS and the SOS. Included was any variable from the ESS which significantly affected the probability of students staying or leaving after their first year. Several additional variables from the SOS were included: satisfaction with the university, measured on a five-pont Likert scale where 1=very satisfied, and 5=very dissatified; satisfaction with the academic environment, a summated index consisting of

---

[3] Response categories included 1=3.5-4.0; 2=3.00-3.49; 3=2.5-2.99; 4=2.00-2.49; 5=1.50-1.99; 6=1.00-1.49; and 7=0.00-0.99.

[4] Response categories included 1=excellent, 2=good, 3=fair, 4=poor, 5=failure.

five items[5] ranging from 5 to 25 with an alpha coefficient of .798; satisfaction with advising, a summated index consisting of two items[6] ranging from 2 to 10 with an alpha reliability of .728; and satisfaction with the institutional attitude toward students, a summated index consisting of two items ranging from 2 to 10 with an alpha coefficient of .660. Also included was a measure of whether the student was receiving financial aid (1=yes and 0=no) and whether the student was a member of a sorority or fraternity (1=yes, 0=no). Sophomore QPI were not included because of missing data[7]. The dependent variable, persistence (1=yes, 0=no), measured whether students were enrolled in the university at two points in time, after their first year and four years after enrollment[8] [9].

A logistic regression was performed to assess the effects of the independent variables on the probability of staying or leaving at the two points. Logistic regression is increasingly used by institutional researchers to analyze categorical or nominal level data (see Hinkle, McLaughlin, and Austin, 1988). Logit models avoid problems with

---

[5] Items included the testing/grading system, instruction in major field, variety of courses offered by this college, out of class availability of instructors, and attitude of faculty toward students.

[6] Items included availability of your advisors and value of information provided by your advisor.

[7] Although inclusion of this variable in retention studies is desirable, its effect on persistence, particularly after the first year, appears to be minimal. Tinto (1985) argues that difficulties in meeting academic demands play a minor role in the decision to leave.

[8]Seventy-two percent of the students completing the ESS were enrolled their sophomore year.

[9]Fifty-three percent of the students completing the SOS and the ESS were enrolled four years after their admission.

heteroscedasticity often associated with dichotomous dependent variables and assumptions of multivariate normality.

Results

Table 1 presents the results of the logistic regression for freshmen. The analysis examines whether the independent variables increase or decrease the odds that students will leave after their first year. The table shows the logit coefficients, the odds, and the significance levels for each variable. Positive values indicate that the independent variables increases the odds of persistance, whereas negative values decrease the odds.

[Put Table 1 here]

As shown in Table 1, the variables significantly affecting first year persistance are region, students from the Mid-Atlantic region were more likely to stay; attending the summer orientation and registration program; higher freshman QPI; more positive ratings of campus social life; and more negative ratings of academic advising. Thus, there is some support for the first hypothesis which indicated that persistence during the first year was based on students' personal characteristics and their initial institutional experiences. Demographic variables were not as strong as expected.

Table 2 presents the logistic regression for second year students. The variables significantly affecting the probability of persistence were: gender, being male; more satisfaction with the university and advising; membership in a fraternity or sorority; not receiving financial aid; and a negative perception of the University's attitude toward students. Again, there is some support for hypothesis two: students persistence during the sophomore year was correlated with positive social experiences, but satisfaction with the academic environment was not significant. However, preliminary findings suggest

that satisfaction with the academic environment may indirectly affect persistence via increased overall satisfaction with the university.

[Put Table 2 here]

Discussion

Tinto (1987) maintains that persistence in college is a reflection of students personal attributes and their experiences within the institution. Although the characteristics of the students are important, what happens after they enroll in the college appears to have a greater impact on persistence. The results of the logistical regression suggest the importance of both social and academic integration into the University. For first year persisters, academic and social experiences influence their decision to return the second year. The summer orientation and registration program, an attempt to build allegiance to the school before the beginning of classes, appears to have a positive effect on first year persistence. Titley (1985) points out that orientation programs assist students in making the transition and adjustment to college. Summer orientation programs may also reflect students' institutional commitment and help integrate them into the academic and social communities sooner.

Students with higher QPIs were more likely to persist after their first year than those with lower grades. As Tinto (1987) notes, deficiencies in academic ability are most detectable in early stages of college career. Initial poor grades may help weed out marginal students.

The only personal characteristic important to first year persistence was the region of the country which the student considered home. It is not surprising to find this important given the predominance of students from one geographic region. This may

help create a socially homogeneous environment for the persisters, but may make integration into the college community difficult for students from other regions.

A surprising finding is the negative effect of academic advising on first year persistence. This should be interpreted cautiously as a majority of freshmen are advised during the summer orientation and registration program which has a positive effect on persistence. Because initial advising is done on a rotating basis by professional advisors, students may not as yet have established a relationship with an advisor or their only experience is with dropping or adding classes, a more routinized process. However, by students' second year, academic advising does have a more positive effect on persistence. By this time students should have established a relationship with an advisor, and advising can help students clarify their educational goals (Crockett, 1985). Other studies of retention (Beal and Noel, 1980, Forrest, 1982) report that academic advising is one component of students' academic experiences that significantly affects persistence.

The results of the longitudinal analysis of second year students substantiate the reinforcing effects of positive academic and social experiences. While advising helps integrate one into the academic community, membership in the Greek community helps students feel connected to other students, an important component of social integration.

Contrary to Noel's (1985) finding of little difference between receipt of financial aid and persistence or nonpersistence, the awarding of financial aid decreases the odds of persistence after students' second year. This finding may reflect differences in the socioeconomic status of persisters and nonpersisters affecting their social integration rather than an effect of financial aid per se. Because of the relative homogeneity of undergraduates who come from high socioeconomic backgrounds, coupled with the many

social opportunities which are dependent on income, those who receive financial aid may feel more socially inhibited because they are different from the mainstream student.

Although gender is not a significant predictor of first year persistence, it becomes important in predicting long term persistence. However, research indicates inconsistence evidence about which gender is more likely to persist. Avakian et al. (1984) found that males had a higher retention rate compared to females while Langer's et al. (1987) data indicate that retention was higher for females. Tinto (1987) found that males were more likely to be enrolled four years after admission while more females graduated on schedule.

Satisfaction with the university also increases the odds that students will persist over four years. Satisfaction many indirectly reflect how well one feels a part of the social and academic communities and may reflect the comfort of the right fit between student and institution.

The negative effect of institutional concern for students on four year persistence is puzzling. It may be that integration into the academic and social communities outweighs the negative institutional persona, that students perceive that while there is a general lack of institutional concern, it does not affect them, or that students expect a large urban institution to have a negative attitude toward students. Further research should explore this effect.

Although some personal characteristics and the academic and social experiences of students are important in predicting persistence at both points in time, these experiences are not static phenomenon that can be measured at one time. Different

components of these characteristics and experiences become salient at different points in time.

Generalizations based on these findings are limited. Specific institutional characteristics (i.e., private, urban) may affect students' experiences. This analysis fails to differentiate among the various types of institutional departure (e.g., stopout, dropout). However, the findings suggest the need to establish more elaborate models which focus on the interactive effects of students' experiences and attitudes at several points during their college career and to explore how these experiences ultimately affect retention.

Table 1. Logistic Regression Model Predicting Persistence After the First Year

Variables	B	std.error	Odds
Gender (1=male)	-.138	.159	0.871
Race (1=white)	-.226	.215	0.797
Region (1=Mid-Atlantic)	.753**	.163	2.12
Graduate from University (1=yes)	.286	.172	1.33
High school GPA	-.142	.095	0.867
Financial aid (1=yes)	-.006	.163	0.993
Quality of instruction	.140	.136	1.15
Academic advising	-.236**	.090	0.789
Campus social life	.297**	.095	1.34
Summer orientation program (1=yes)	.646**	.162	1.90
Freshman GPA	.0002**	.000	1.00
Constant	-1.04	.726	
(N)	(886)		

* $p < .05$
** $p < .01$

Table 2. Logistic Regression Model Predicting Persistence After the Second Year

Variables	B	std.error	Odds
Gender (1=male)	1.33**	.333	3.80
Region (1=Mid-Atlantic)	0.141	.308	1.15
Graduate from university (1=yes)	0.506	.310	1.65
Financial aid (1=yes)	-.909**	.318	0.402
Academic environment	0.042	.062	1.04
Academic advising	0.197*	.102	1.21
Institutional attitude toward students	-.367**	.130	0.692
Satisfaction with university	1.19**	.261	3.31
Campus social life	0.001	.171	1.01
Summer registration program (1=yes)	0.493	.296	1.64
Membership in sorority or fraternity	2.21**	.583	9.17
Constant	-4.42	1.20	
(N)	(367)		

* $p < .05$
** $p < .01$

References

Astin, A.W. (1975). Preventing students from dropping out. California: Jossey Bass, Inc.

Avakian, N.A., Mackinney, A.C., & Allen, G.R. (1984). Corelates of student retention: An eight year study. Paper presented at The Annual Forum of the Association for Institutional Research. Fort Worth, Texas. (Eric Document Reproduction Service No. ED 246 764)

Beal, P.E. & Noel, L. (1980). What works in student retention. Iowa: American College Testing Program and National Center for Higher Education Management Systems.

Crockett, D. S. (1985). Academic advising. In L. Noel R. Levitz, D. Salvri, & Associates (eds.). Increasing student retention. California: Jossey Bass.

Forrest, A. (1982) Increasing student competence and persistence: The best case for general education. Iowa: American College Testing Program and National Center for Advancement of Educational Practices.

Hinkle, D. E., McLaughlin, G.W., & Austin, J.T. (1988). Using log-linear models in higher education research. New Directions for Institutional Research, 58, 23-41.

Kinnick, M. K. (1985). Increasing the use of student outcomes information. New Directions for Institutional Research. California: Jossey-Bass, Inc., 47, 93-10.

Langer, P., Wilton, J., & Presley, J.B. (1987). A Longitudinal study of student retention at an urban commute university. Boston, MA: University of Massachusetts, Boston. (Eric Document Reproduction Service No. ED 294 496)

Noel, L. (1985). Increasing student retention: New challenges and potential. In L. Noel R. Levitz, D. Salvri, & Associates (eds.). Increasing student retention. California: Jossey Bass.

Tinto, Vincent. (1985). Dropping out and other forms of withdrawal from college. Noel R. Levitz, D. Salvri, & Associates (eds.). Increasing student retention. California: Jossey Bass.

Tinto Vincent. (1987). Leaving college: Rethinking the causes and cures of student attrition. Illinois: University of Chicago Press.

Titley, Bonnie. (1985). Orientation programs. In L. Noel et. al. (eds.). Increasing Student Retention. San Francisco: Jossey Bass, pp. 221-243. Noel R. Levitz, D. Salvri, & Associates (eds.). Increasing student retention. California: Jossey Bass.